New England Bioassay Inc.
Aquatic Toxicity Testing Services
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Manchester, CT 06042
(860)-643-9560
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CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee: Patriot Beverages NPDES # MA0004936
Report submitted to: 20 Harvard Road
Littleton, MA 01460
Sample ID: Effluent
Test Month/Year: October 2020
NEB Proj # 44697

Test Type / Method: *Pimephales promelas* Modified Chronic Static-Renewal Freshwater Test Method 1000.0; EPA 821-R-02-013

Effluent Sample Dates: #1 10/4-5/20 #2 10/6-7/20 #3 10/8-9/20

Test Start Date: 10/5/20

Results Summary

Your results were as follows:

Passed all permit limits

Acute Test Results

Species	LC50	A-NOEC	Permit Limit	Pass / Fail
Pimephales promelas	>100%	100%	≥ 100%	Pass

Chronic Test Results

Species	C-NOEC	C-LOEC	IC25	Permit Limit	Pass/Fail
Pimephales promelas	100%	>100%	>100%	≥ 91%	Pass

Data Qualifiers affecting this test:

This test had an anomalous result. See "Results Discussion" on Pimephales promelas Test Results page for explanation.

Certifications & Approvals: NH ELAP (2071), NJ DEP (CT405)

Test Report Certification

Permittee name:	Patriot Beverages	Permit number:	MA0004936
Client sample ID:	Effluent	Test Start Date:	10/5/20

Whole Effluent Toxicity Test Report Certification (Permittee)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: _____ (Date)

_____ Authorized Signature

_____ Print or Type Name and Title

_____ Print or Type the Permittee's Name

MA0004936 Print or Type the NPDES Permit Number

Whole Effluent Toxicity Test Report Certification (Bioassay Laboratory)

The results reported relate only to the samples submitted as received

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 10/29/20 (Date)

Kimberly Wills

Kimberly Wills
Laboratory Director
New England Bioassay Inc.

General Test Conditions

Permittee name: Patriot Beverages | Permit number: MA0004936

Client sample ID: Effluent | Test Start Date: 10/5/20

Sample Collection Information

Effluent #1 Dates/Times: 10/4-5/20 @ 0700-0700 Receiving Water #1 Date/Time: 10/5/20 @ 0630

Effluent #2 Dates/Times: 10/6-7/20 @ 0700-0700 Receiving Water #2 Date/Time: 10/7/20 @ 0600

Effluent #3 Dates/Times: 10/8-9/20 @ 0700-0700 Receiving Water #3 Date/Time: 10/9/20 @ 0730

Were a minimum of three samples collected? Yes ☑ No ☐ *(see note below)

Were samples used within the first 36 hours of collection? Yes ☑ No ☐ * (see note below)

* sample collection note:

Test Conditions

Permittee's Receiving Water: Reedy Meadow Brook

• Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)

• Control water: Receiving water collected at a point immediately upstream of or away from the discharge

Effluent concentrations tested: 0%, 6.25%, 12.5%, 25%, 50%, 91%, 100%

Was effluent salinity adjusted? No ☑ Yes ☐ with Instant Ocean sea salts to _____ ppt

Dechlorination procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method

• Chlorine was elevated due to interference. Chlorine was ≤ 0.05 mg/L by amperometric titration

Aeration: Did Dissolved Oxygen levels fall below 40% saturation? Yes ☐ No ☑

Test Aerated at <100 bubbles/minute as of: N/A

TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"

Reference Toxicant Data

Fathead minnows

Date:	10/1/20
Toxicant:	Sodium chloride
Dilution Water:	NEB Soft Water
Organism Source:	NEB
Growth IC25:	1.48 g/L
Results within range	Yes ☑ No ☐

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Effluent Test Dates: 10/5/20 - 10/12/20

Test Acceptability Criteria

Lab Diluent Survival:	100 %	Mean Lab Diluent Growth:	0.75 mg
Brook Control Survival:	92.5 %	Mean Brook Control Growth:	0.76 mg
Thiosulfate Control Survival:	N/A %	Mean Thiosulfate Control Growth:	N/A mg

Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Results

		Permit Limit	Test Result	Pass/Fail Status
Acute Data	48 hr LC50	≥ 100%	>100%	Pass
	48 hr NOEC		100%	
	TUa			
Chronic Data	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
	Growth C-LOEC		>100%	
	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability

Growth PMSD: 19.6% Upper & Lower EPA bounds: 12 - 30% ☐ w ☑ thin bounds ☐ High

☐ PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC)

☑ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.

☐ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent difference (RPD) between the control and each treatment was calculated and compared to the lower bound.

- ☐ The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
- ☐ Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
- ☐ No statistically significant reductions were observed in this test.

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Effluent Test Dates: 10/5/20 - 10/12/20

Concentration - Response Evaluation

Survival: #5 The concentration - response relationship observed in this data set corresponds to the following item number in Chapter Four of "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000: #5 Interrupted concentration-response: significant effects bracketed by non-significant effects.

Growth: #5 The concentration - response relationship observed in this data set corresponds to the following item number in Chapter Four of "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000: #5 Interrupted concentration-response: significant effects bracketed by non-significant effects.

The concentration - response relationship was reviewed and the following determination was made:

Survival	Growth	
		Results are reliable and reportable
X	X	Results are anomalous (see explanation below)
		Results are inconclusive - retest (see explanation below)

Results Discussion (if applicable):

Please note that a significant decrease in survival and growth was observed in the 12.5% effluent concentration in the test. Such an effect was not observed in the 6.25%, 25%, 50%, 91% and 100% effluent concentrations. Due to this unusual concentration-response relationship, the guidelines indicated in "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000 were consulted. The concentration-response relationship observed in this test for survival and growth resembles the relationship described in part 5 of Chapter 4 where significant effects were bracketed by non-significant effects. All suggestions were reviewed and considered, and none seemed to reveal the cause of this unusual response pattern. The test sensitivity was then considered. The sensitivity of this test appears to be moderate to high. This guidance document recommended that in such a case the significantly different treatment is likely the result of a Type I error and it should be considered anomalous and the NOEC should be determined as the highest concentration that was not significantly different from the control.

TEST METHODS

Pimephales promelas

Test type:	Modified Chronic Static Renewal Freshwater Test
Test Reference Manual:	EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms"
Test Method:	*Pimephales promelas* Survival and Growth Test - EPA 1000.0
Temperature:	25 ˚C ± 1˚C (Temperatures should not deviate by more than 3˚C during the test) (required)
Light Quality:	Ambient Laboratory Illumination (recommended)
Light Intensity:	10-20 µE/m2/s, or 50-100 ft-c (recommended)
Photoperiod:	16 hours light, 8 hours dark (recommended)
Test chamber size:	600 mL (500 mL is recommended minimum)
Test solution volume:	250 mL (recommended minimum)
Renewal of Test Solutions:	Daily (required)
Age of Test Organisms:	Newly hatched larvae less than 24 hours old (required)
Number of Organisms Per Test Chamber:	10 (recommended)
Number of Replicate Test Chambers Per Treatment:	4 (required minimum)
Number of Organisms Per Test Concentration:	40 (required minimum)
Feeding Regime:	Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient *Artemia* are added to provide an excess.
Cleaning:	Siphoned daily, immediately before test solution renewal (required)
Aeration:	None, unless DO concentration falls below 4.0 mg/L, at which point the rate should not exceed 100 bubbles/minute. (recommended)
Test Duration:	7 days (required)
Endpoints:	Survival and growth (weight) (required)
Test Acceptability:	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg (required)
Sampling Requirements:	Minimum of three samples with a maximum holding time of 36 hours before first use. (required)
Sample volume required:	2.5 L/Day (recommended)

PIMEPHALES PROMELAS
DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM
CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	*P.promelas* TEST ID #	20-1452
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C40-3875/76
	Littleton, MA 01460	NEB PROJECT #	44697
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Effluent
PERMIT NUMBER:	MA0004936		
DILUTION WATER:	Soft Synthetic Lab Water		

VERTEBRATES

TEST SET-UP TECHNICIAN:	BT
TEST SPECIES:	*Pimephales promelas*
NEB LOT #	Pp20(10-5) 1615
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C40-S021	50	30

	DATE	TIME
TEST START:	10/5/20	1303
TEST END:	10/12/20	1126

COMMENTS:

REVIEWED BY: Kimberly Wills DATE: 10/29/20

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	44697				TEST ORGANISM		*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water				START DATE:		10/5/20 TIME:	1303
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	25.5	24.8	25.4	25.2	25.2	25.4	25.0	
D.O. mg/L Initial	8.2	8.4	8.1	8.2	8.4	8.2	8.5	
pH s.u. Initial	7.5	7.5	7.7	7.7	7.6	7.7	7.8	
Conductivity µS Initial	173	173	174	172	171	174	174	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.2	25.2	24.7	24.9	24.9	24.7	24.9	
D.O. mg/L Final	7.6	7.4	7.1	6.5	7.1	7.8	7.4	
pH s.u. Final	7.2	7.5	7.5	7.4	7.3	7.5	7.6	
Conductivity µS Final	197	200	198	199	199	196	199	
Brook Control	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	26.0	25.0	24.1	25.8	25.4	25.9	25.2	
D.O. mg/L Initial	6.4	7.9	6.0	6.9	7.6	8.2	8.8	
pH s.u. Initial	7.0	7.1	7.1	7.0	7.1	7.2	7.2	
Conductivity µS Initial	615	611	660	649	662	669	665	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	24.9	25.3	24.6	25.0	25.0	24.8	25.0	
D.O. mg/L Final	7.2	7.3	7.2	6.1	6.4	6.7	6.8	
pH s.u. Final	7.1	7.4	7.3	7.2	7.3	7.3	7.5	
Conductivity µS Final	631	644	683	685	698	692	703	
6.25%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	25.4	24.8	25.1	25.2	25.3	25.4	25.1	
D.O. mg/L Initial	8.2	8.4	8.1	8.2	7.9	8.2	8.4	
pH s.u. Initial	7.9	7.8	7.7	8.2	8.0	8.2	8.1	
Conductivity µS Initial	284	285	305	295	293	299	297	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.2	25.1	24.7	24.8	24.7	24.8	24.7	
D.O. mg/L Final	7.4	7.2	6.8	6.3	6.8	7.1	7.7	
pH s.u. Final	7.2	7.7	7.7	7.4	7.7	7.7	7.9	
Conductivity µS Final	307	315	325	328	326	326	329	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	44697				TEST ORGANISM		*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water				START DATE:		10/5/20 TIME:	1303
12.5%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	25.3	24.8	25.1	25.2	25.3	25.4	25.5	
D.O. mg/L Initial	8.3	8.4	8.1	8.2	8.3	8.2	8.3	
pH s.u. Initial	8.2	8.0	8.0	8.4	8.3	8.4	8.3	
Conductivity µS Initial	378	384	420	411	407	405	401	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.1	25.1	24.8	24.6	24.6	24.6	24.3	
D.O. mg/L Final	7.4	7.2	6.8	5.4	6.5	6.9	7.6	
pH s.u. Final	7.4	8.1	8.1	7.8	7.9	7.9	8.2	
Conductivity µS Final	401	414	439	447	449	436	444	
25%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	25.3	24.7	25.1	25.3	25.2	25.4	25.6	
D.O. mg/L Initial	8.4	8.5	8.3	8.3	8.3	8.3	8.3	
pH s.u. Initial	8.4	8.3	8.4	8.6	8.4	8.5	8.5	
Conductivity µS Initial	602	601	669	658	646	648	646	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.1	25.1	24.7	24.6	24.8	24.8	24.6	
D.O. mg/L Final	7.3	7.0	6.8	5.6	6.6	6.9	6.9	
pH s.u. Final	7.8	8.4	8.5	8.2	8.3	8.3	8.4	
Conductivity µS Final	628	638	691	702	691	680	692	
50%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	25.2	24.7	25.0	25.5	25.1	25.1	25.8	
D.O. mg/L Initial	8.7	8.6	8.5	8.5	8.4	8.4	8.6	
pH s.u. Initial	8.5	8.4	8.5	8.6	8.5	8.5	8.5	
Conductivity µS Initial	1,043	1,040	1,145	1,132	1,108	1,115	1,117	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.2	25.2	24.8	24.7	24.7	24.6	24.7	
D.O. mg/L Final	7.5	6.9	6.8	5.2	6.8	7.0	7.1	
pH s.u. Final	8.2	8.6	8.7	8.6	8.6	8.5	8.8	
Conductivity µS Final	1,053	1,083	1,161	1,182	1,173	1,157	1,172	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	44697				TEST ORGANISM		*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water				START DATE:		10/5/20 TIME:	1303
91%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	24.9	24.6	24.8	25.7	25.0	25.5	26.0	
D.O. mg/L Initial	9.1	9.0	8.9	8.7	8.7	8.8	8.8	
pH s.u. Initial	8.5	8.5	8.5	8.6	8.5	8.5	8.5	
Conductivity µS Initial	1,712	1,701	1,903	1,870	1,839	1,842	1,843	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.5	25.6	24.8	24.6	25.2	24.7	25.0	
D.O. mg/L Final	7.4	6.9	7.0	5.3	6.7	6.9	7.1	
pH s.u. Final	8.5	8.7	8.7	8.6	8.6	8.5	8.6	
Conductivity µS Final	1,662	1,732	1,869	1,869	1,843	1,808	1,807	
100%	1	2	3	4	5	6	7	Remarks
Tech Initials Initial	CH	BT	CMH	BT	CW	CMH	CW	
Temp °C Initial	24.6	24.6	24.6	25.8	24.6	25.4	26.0	
D.O. mg/L Initial	9.8	9.3	9.6	8.8	9.0	9.1	9.1	
pH s.u. Initial	8.5	8.5	8.5	8.6	8.5	8.5	8.5	
Conductivity µS Initial	1,868	1,858	2,074	2,048	1,997	2,015	2,007	
Tech Initials Final	BT	CMH	BT	BT	CMH	CW	KF	
Temp °C Final	25.1	25.5	24.7	24.8	25.0	24.9	24.8	
D.O. mg/L Final	7.4	7.0	7.1	5.6	6.9	6.8	7.2	
pH s.u. Final	8.6	8.6	8.6	8.5	8.5	8.5	8.6	
Conductivity µS Final	1,863	1,862	2,008	2,010	1,987	1,960	1,964	

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	44697	TEST NUMBER:	20-1452	COC #	C40-3875/76
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp20(10-5) 1615
START DATE:	10/5/20	TIME:	1303	END DATE:	10/12/20	TIME:	1126

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	BT	CH	CMH	CH	CW	CMH	CW	CH	
NEB Lab Synthetic Diluent	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
Reedy Meadow Brook Control	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	9	9	9	9	
	C	10	10	10	10	9	9	9	9	
	D	10	10	10	10	9	9	9	9	
6.25%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	9	9	9	
	C	10	10	10	10	8	6	6	5	
	D	10	10	10	10	10	10	10	10	
12.5%	A	10	10	10	10	10	9	8	8	
	B	10	10	10	10	10	6	6	6	
	C	10	10	10	10	10	10	6	6	
	D	10	10	10	10	9	6	6	6	
25%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	9	9	9	
	C	10	10	10	10	10	10	10	7	
	D	10	10	10	10	10	10	10	10	
50%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
91%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

D.O. concentration fell below 4.0 mg/L, all concentrations were aerated at <100 bubbles/minute as of: N/A

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	44697	TEST NUMBER:	20-1452	COC #	C40-3875/76
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp20(10-5) 1615
START DATE:	10/5/20	TIME: 1303	END DATE:	10/12/20	TIME: 1126

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	BT	CH	CMH	CH	CW	CMH	CW	CH	
100%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages | Test Species: *Pimephales promelas* | Test ID: 20-1452

Test Date: 10/5/20 | Project # 44697

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 5 Observations			Date: 10/10/20	Technician:	CMH		
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:	1f	Rep C:	2f	Rep D:	
12.5%	Rep A:	1nf	Rep B:	4f	Rep C:		Rep D:	1nf 2f
25%	Rep A:		Rep B:	1nf	Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day 6 Observations			Date: 10/11/20	Technician:	CW		
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:	f	Rep B:	3f, 1nf	Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages Test Species: *Pimephales promelas* Test ID: 20-1452

Test Date: 10/5/20 Project # 44697

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 7 Observations			Date: 10/12/20	Technician: CH			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:	NF	Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:	F	Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460		
NEB PROJECT #	44697	NEB TEST NUMBER:	20-1452
TEST START DATE	10/5/20	WEIGHING DATE:	10/22/20
TEST END DATE	10/12/20		
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	CH	ANALYST-FINAL WEIGHTS	CW

Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
NEB Lab Synthetic Diluent	A	907.32	914.84
	B	920.13	927.93
	C	919.60	926.79
	D	907.94	915.29
Reedy Meadow Brook Control	A	924.37	932.80
	B	918.54	925.97
	C	924.43	931.48
	D	908.08	915.66
6.25%	A	904.73	912.46
	B	898.39	905.68
	C	908.64	913.84
	D	917.26	924.97
12.5%	A	917.44	924.71
	B	905.65	911.70
	C	914.90	919.05
	D	909.83	915.44
25%	A	913.69	921.67
	B	908.24	916.07
	C	919.62	925.63
	D	903.40	911.27
50%	A	899.22	906.58
	B	908.57	917.00
	C	911.80	919.60
	D	894.56	902.35
91%	A	905.93	914.64
	B	924.37	932.99
	C	908.23	915.71
	D	905.44	913.15
100%	A	915.78	924.44
	B	904.39	913.17
	C	915.45	923.88
	D	923.82	932.15

Concentration	Rep	Final Weight (mg)	Initial Weight (mg)	Total Weight (mg)	Average per fish (mg)	Mean fish weight (mg)	Standard Deviation
NEB Lab Synthetic Diluent	1	914.84	907.32	7.52	0.752	0.7465	0.0260832
	2	927.93	920.13	7.80	0.780		
	3	926.79	919.60	7.19	0.719		
	4	915.29	907.94	7.35	0.735		
Reedy Meadow Brook Control	1	932.80	924.37	8.43	0.843	0.7623	0.058271634
	2	925.97	918.54	7.43	0.743		
	3	931.48	924.43	7.05	0.705		
	4	915.66	908.08	7.58	0.758		
6.25%	1	912.46	904.73	7.73	0.773	0.6983	0.120552547
	2	905.68	898.39	7.29	0.729		
	3	913.84	908.64	5.20	0.520		
	4	924.97	917.26	7.71	0.771		
12.5%	1	924.71	917.44	7.27	0.727	0.5770	0.128820288
	2	911.70	905.65	6.05	0.605		
	3	919.05	914.90	4.15	0.415		
	4	915.44	909.83	5.61	0.561		
25%	1	921.67	913.69	7.98	0.798	0.7422	0.094379994
	2	916.07	908.24	7.83	0.783		
	3	925.63	919.62	6.01	0.601		
	4	911.27	903.40	7.87	0.787		
50%	1	906.58	899.22	7.36	0.736	0.7845	0.044064347
	2	917.00	908.57	8.43	0.843		
	3	919.60	911.80	7.80	0.780		
	4	902.35	894.56	7.79	0.779		
91%	1	914.64	905.93	8.71	0.871	0.8130	0.062593929
	2	932.99	924.37	8.62	0.862		
	3	915.71	908.23	7.48	0.748		
	4	913.15	905.44	7.71	0.771		
100%	1	924.44	915.78	8.66	0.866	0.8550	0.020639767
	2	913.17	904.39	8.78	0.878		
	3	923.88	915.45	8.43	0.843		
	4	932.15	923.82	8.33	0.833		

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	11-2551-2825	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Angular (Corrected)	C > T	100	>100	n/a	1

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		12.5	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		25	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		50	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		91	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		100	18	10	1	6	Asymp	0.8571	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	6	65540	<1.0E-37	Significant Effect
Error	0	0	21			
Total	0		27			

2d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
91		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6.25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
91		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	11-2551-2825	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

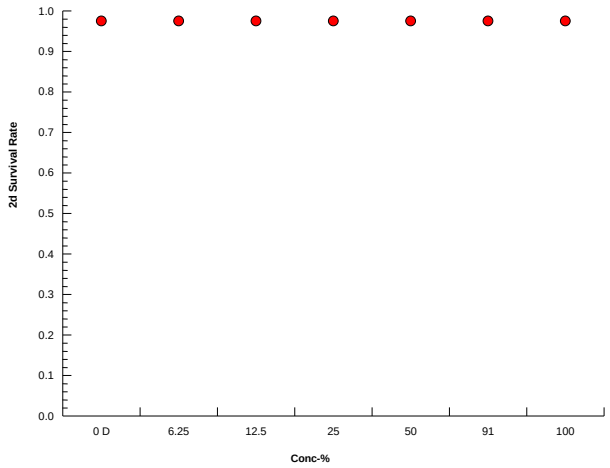
Angular (Corrected) Transformed Detail

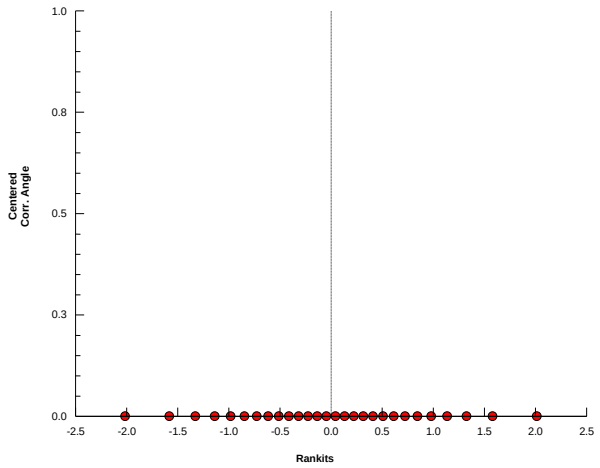
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.412	1.412	1.412	1.412
50		1.412	1.412	1.412	1.412
91		1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	00-5114-7784	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:10	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	>100	n/a	1	15.39%

Steel Many-One Rank Sum Test

Control vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water	6.25	14	10	1	6	Asymp	0.3760	Non-Significant Effect
	12.5*	10	10	0	6	Asymp	0.0480	Significant Effect
	25	14	10	1	6	Asymp	0.3760	Non-Significant Effect
	50	18	10	1	6	Asymp	0.8571	Non-Significant Effect
	91	18	10	1	6	Asymp	0.8571	Non-Significant Effect
	100	18	10	1	6	Asymp	0.8571	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.748552	0.124759	6	6.261	6.9E-04	Significant Effect
Error	0.418469	0.0199271	21			
Total	1.16702		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.315	3.812	0.0018	Unequal Variances
Variances	Mod Levene Equality of Variance Test	2.295	3.812	0.0734	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.7386	0.8975	1.1E-05	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	0.8500	0.4712	1.0000	0.9500	0.5000	1.0000	0.1190	28.01%	15.00%
12.5		4	0.6500	0.4909	0.8091	0.6000	0.6000	0.8000	0.0500	15.38%	35.00%
25		4	0.9000	0.6750	1.0000	0.9500	0.7000	1.0000	0.0707	15.71%	10.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
91		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6.25		4	1.215	0.7432	1.686	1.331	0.7854	1.412	0.1481	24.39%	13.98%
12.5		4	0.9413	0.7655	1.117	0.8861	0.8861	1.107	0.05527	11.74%	33.33%
25		4	1.266	0.9499	1.582	1.331	0.9912	1.412	0.09936	15.70%	10.34%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
91		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	00-5114-7784	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:10	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	0.9000	0.5000	1.0000
12.5		0.8000	0.6000	0.6000	0.6000
25		1.0000	0.9000	0.7000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

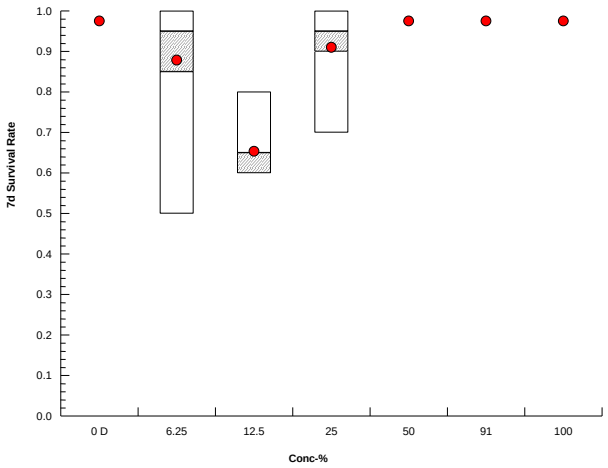
Angular (Corrected) Transformed Detail

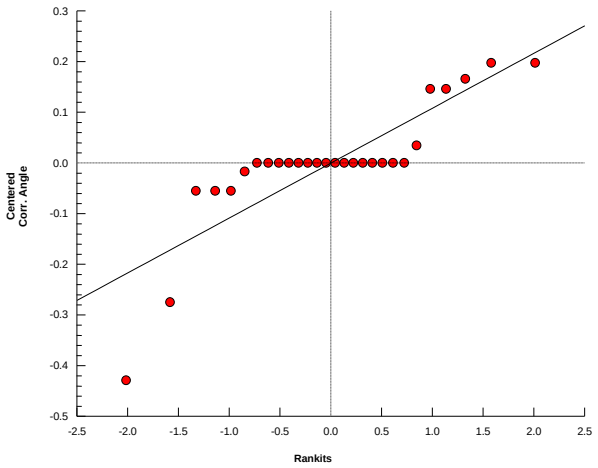
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.249	0.7854	1.412
12.5		1.107	0.8861	0.8861	0.8861
25		1.412	1.249	0.9912	1.412
50		1.412	1.412	1.412	1.412
91		1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	9/10	5/10	10/10
12.5		8/10	6/10	6/10	6/10
25		10/10	9/10	7/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	21-3391-3050	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	27 Oct-20 9:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	100	>100	n/a	1	19.00%

Dunnett Multiple Comparison Test

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water	6.25	0.8327	2.448	0.142	6	CDF	0.5310	Non-Significant Effect
	12.5*	2.925	2.448	0.142	6	CDF	0.0188	Significant Effect
	25	0.07334	2.448	0.142	6	CDF	0.8364	Non-Significant Effect
	50	-0.6558	2.448	0.142	6	CDF	0.9673	Non-Significant Effect
	91	-1.148	2.448	0.142	6	CDF	0.9918	Non-Significant Effect
	100	-1.873	2.448	0.142	6	CDF	0.9992	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.7465	0.25	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.194815	0.0324691	6	4.836	0.0030	Significant Effect
Error	0.141003	0.0067144	21			
Total	0.335818		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	12.96	16.81	0.0437	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9214	0.8975	0.0376	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.7465	0.705	0.788	0.7435	0.719	0.78	0.01304	3.49%	0.00%
6.25		4	0.6982	0.5064	0.8901	0.75	0.52	0.773	0.06028	17.26%	6.46%
12.5		4	0.577	0.372	0.782	0.583	0.415	0.727	0.06441	22.33%	22.71%
25		4	0.7423	0.5921	0.8924	0.785	0.601	0.798	0.04719	12.72%	0.57%
50		4	0.7845	0.7144	0.8546	0.7795	0.736	0.843	0.02203	5.62%	-5.09%
91		4	0.813	0.7134	0.9126	0.8165	0.748	0.871	0.0313	7.70%	-8.91%
100		4	0.855	0.8222	0.8878	0.8545	0.833	0.878	0.01032	2.41%	-14.53%

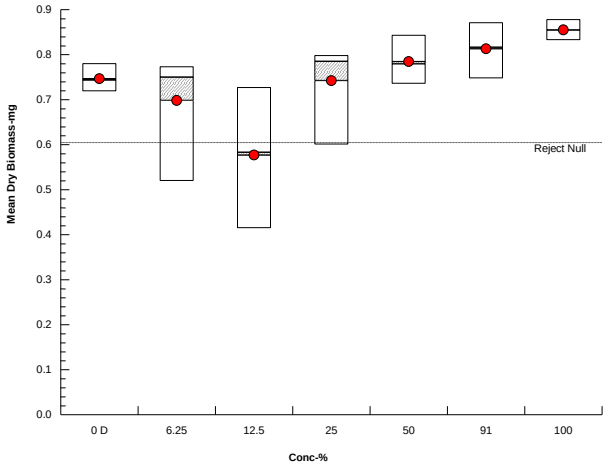
Mean Dry Biomass-mg Detail

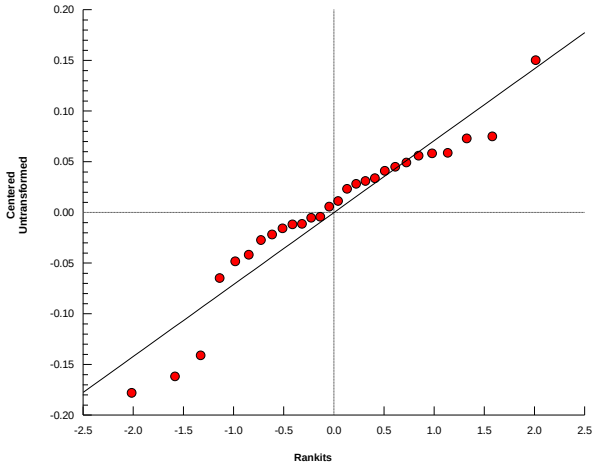
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.752	0.78	0.719	0.735
6.25		0.773	0.729	0.52	0.771
12.5		0.727	0.605	0.415	0.561
25		0.798	0.783	0.601	0.787
50		0.736	0.843	0.78	0.779
91		0.871	0.862	0.748	0.771
100		0.866	0.878	0.843	0.833

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	21-3391-3050	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	27 Oct-20 9:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	16-4605-9895	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1099540	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

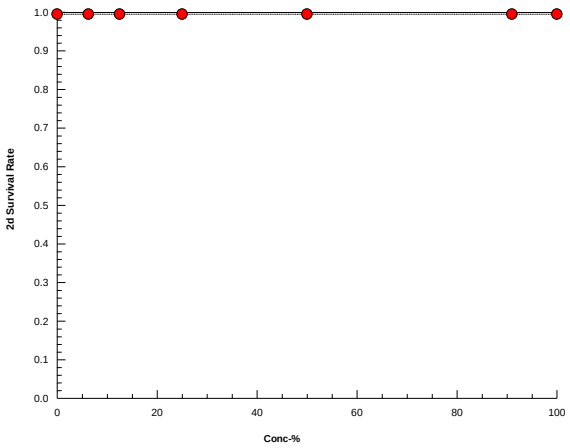
2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	16-4605-9895	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	15-3277-7957	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1679415	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	0.8500	0.5000	1.0000	0.2380	28.01%	15.0%	34/40	0.9	10.0%
12.5		4	0.6500	0.6000	0.8000	0.1000	15.38%	35.0%	26/40	0.9	10.0%
25		4	0.9000	0.7000	1.0000	0.1414	15.71%	10.0%	36/40	0.9	10.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9	10.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9	10.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9	10.0%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	0.9000	0.5000	1.0000
12.5		0.8000	0.6000	0.6000	0.6000
25		1.0000	0.9000	0.7000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

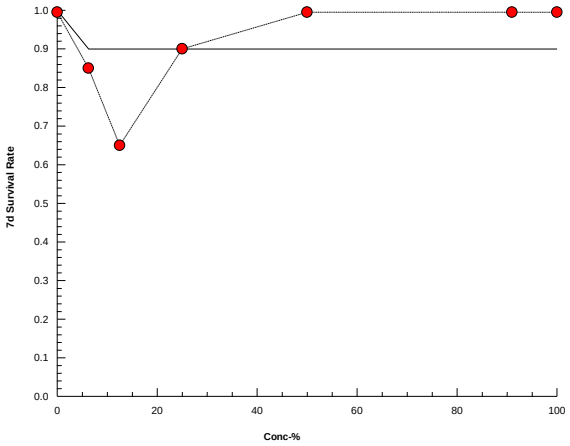
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	15-3277-7957	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Oct-20 16:09	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	05-2754-0686	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	27 Oct-20 9:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-8075-1928	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	05 Oct-20 13:03	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	12 Oct-20 11:26	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-2138-0817	**Code:**	42D6E9D1	**Project:**	
Sample Date:	05 Oct-20 07:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	05 Oct-20 11:11	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	148709	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.7465	0.25	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Biomass-mg Summary

			Calculated Variate						Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	D	4	0.7465	0.719	0.78	0.02608	3.49%	0.0%	0.7465	0.0%
6.25		4	0.6982	0.52	0.773	0.1206	17.26%	6.46%	0.745	0.2%
12.5		4	0.577	0.415	0.727	0.1288	22.33%	22.71%	0.745	0.2%
25		4	0.7423	0.601	0.798	0.09438	12.72%	0.57%	0.745	0.2%
50		4	0.7845	0.736	0.843	0.04406	5.62%	-5.09%	0.745	0.2%
91		4	0.813	0.748	0.871	0.06259	7.70%	-8.91%	0.745	0.2%
100		4	0.855	0.833	0.878	0.02064	2.41%	-14.53%	0.745	0.2%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.752	0.78	0.719	0.735
6.25		0.773	0.729	0.52	0.771
12.5		0.727	0.605	0.415	0.561
25		0.798	0.783	0.601	0.787
50		0.736	0.843	0.78	0.779
91		0.871	0.862	0.748	0.771
100		0.866	0.878	0.843	0.833

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	05-2754-0686	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	27 Oct-20 9:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics

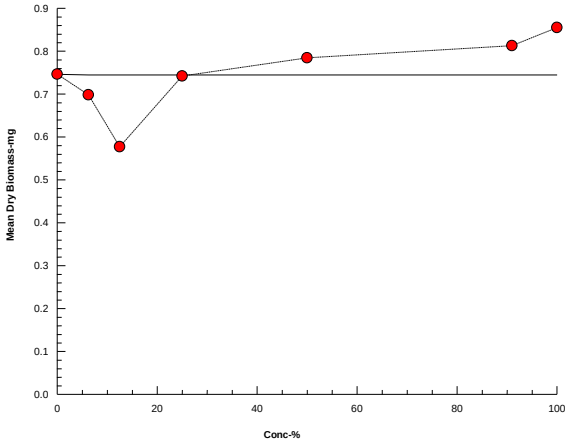


Table of Random Permutations of 16 **P.promelas Test ID#** 20-1452

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13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	13	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	13	4	3	10	4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15	2	1	13	12	16	3	4	8	10	1	15	5	14	12	14	12	3	2
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15	7	5	2	10	7	8	12	6	15	6	13	16	12	15	4	11	8	12	6
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13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
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5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
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7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
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14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9	3	3	7	13	11	10	4	5	1
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12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
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10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.

PHOENIX
Environmental Laboratories, Inc.

Monday, October 12, 2020

Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCG90796
Sample ID#s: CG90796 - CG90799

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

October 12, 2020

SDG I.D.: GCG90796

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFF #1 C40-3875	CG90796	WASTE WATER
REEDY MEADOW BROOK #1 C40-3876	CG90797	WATER
EFF GRAB #1	CG90798	WASTE WATER
SRCF LAB WATER C40-3872	CG90799	WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 12, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/05/20	7:00
Location Code:	NEB	Received by:	SW	10/05/20	16:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG90796
Phoenix ID: CG90796

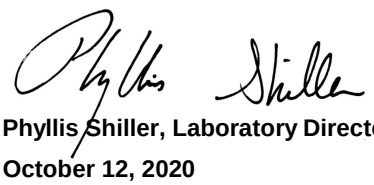
Project ID: PATRIOT BEVERAGES
Client ID: EFF #1 C40-3875

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.058	0.010	mg/L	1	10/08/20	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/06/20	RS	SM3113B
Copper	0.0020	0.0010	mg/L	1	10/08/20	EK	E200.7
Hardness (CaCO3)	183	0.1	mg/L	1	10/09/20		SM2340B
Nickel	0.027	0.001	mg/L	1	10/08/20	EK	E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/06/20	RS	SM3113B
Zinc	0.007	0.002	mg/L	1	10/08/20	TH	E200.7
Alkalinity-CaCO3	658	25.0	mg/L	5	10/05/20	AP	SM2320B-11
Conductivity	1850	5	umhos/cm	1	10/05/20	AP	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	10/10/20	KDB	E350.1
Tot. Diss. Solids	1100	14	mg/L	1.4	10/06/20	QH	SM2540C-11
Tot. Org. Carbon	6.3	2.5	mg/L	5	10/06/20	ARG	SM5310B-11
Total Solids	1100	20	mg/L	2	10/06/20	AG/EP	SM2540B-11
Total Metals Digestion	Completed				10/07/20	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
October 12, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 12, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		10/05/20	6:30
Location Code:	NEB	Received by:	SW	10/05/20	16:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG90796
Phoenix ID: CG90797

Project ID: PATRIOT BEVERAGES
Client ID: REEDY MEADOW BROOK #1 C40-3876

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.053	0.010	mg/L	1	10/08/20	TH	SW6010D/E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/06/20	RS	SM3113B/SW7010-10
Copper	0.0013	0.0010	mg/L	1	10/08/20	TH	SW6010D/E200.7
Hardness (CaCO3)	100	0.1	mg/L	1	10/09/20		E200.7
Nickel	0.003	0.001	mg/L	1	10/08/20	EK	SW6010D/E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/06/20	RS	SM3113B/SW7010
Zinc	0.003	0.002	mg/L	1	10/08/20	TH	SW6010D/E200.7
Alkalinity-CaCO3	59.3	5.00	mg/L	1	10/05/20	AP	SM2320B-11
Conductivity	612	5	umhos/cm	1	10/05/20	AP	SM2510B-11
Ammonia as Nitrogen	0.14	0.05	mg/L	1	10/10/20	KDB	E350.1
pH	7.29	1.00	pH Units	1	10/05/20 20:10	AP	SM4500-H B-11
Tot. Org. Carbon	5.16	0.50	mg/L	1	10/06/20	ARG	SM5310B-11
Total Metals Digestion	Completed				10/07/20	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 12, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 12, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/05/20	7:00
Location Code:	NEB	Received by:	SW	10/05/20	16:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG90796
Phoenix ID: CG90798

Project ID: PATRIOT BEVERAGES
Client ID: EFF GRAB #1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.03	0.02	mg/L	1	10/05/20 20:05	MW	SM4500CLG-97
pH	8.43	1.00	pH Units	1	10/05/20 20:33	AP	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 12, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 12, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		10/05/20	
Location Code:	NEB	Received by:	SW	10/05/20	16:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG90796
Phoenix ID: CG90799

Project ID: PATRIOT BEVERAGES
Client ID: SRCF LAB WATER C40-3872

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	< 0.010	0.010	mg/L	1	10/08/20	TH	SW6010D/E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/06/20	RS	SM3113B/SW7010-10
Copper	< 0.0010	0.0010	mg/L	1	10/08/20	TH	SW6010D/E200.7
Hardness (CaCO3)	48.6	0.1	mg/L	1	10/09/20		E200.7
Nickel	0.004	0.001	mg/L	1	10/08/20	EK	SW6010D/E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/06/20	RS	SM3113B/SW7010
Zinc	< 0.002	0.002	mg/L	1	10/08/20	TH	SW6010D/E200.7
Alkalinity-CaCO3	38.3	5.00	mg/L	1	10/05/20	AP	SM2320B-11
Conductivity	174	5	umhos/cm	1	10/05/20	AP	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	10/10/20	KDB	E350.1
pH	7.92	1.00	pH Units	1	10/05/20 20:37	AP	SM4500-H B-11
Tot. Org. Carbon	0.59	0.50	mg/L	1	10/06/20	ARG	SM5310B-11
Total Metals Digestion	Completed				10/07/20	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 12, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 12, 2020

QA/QC Data

SDG I.D.: GCG90796

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 548202 (mg/L), QC Sample No: CG90796 (CG90796, CG90797, CG90799)														
Cadmium - Water	BRL	0.0001	<0.0001	<0.0001	NC	111			107			75 - 125	20	
QA/QC Batch 548202 (mg/L), QC Sample No: CG90796 (CG90796, CG90797, CG90799)														
Lead (Furnace) - Water	BRL	0.001	<0.0003	<0.001	NC	107			103			75 - 125	30	
QA/QC Batch 548507 (mg/L), QC Sample No: CG92120 (CG90796, CG90797, CG90799)														
ICP Metals - Aqueous														
Aluminum	BRL	0.010	0.040	0.039	NC	96.9	98.8	1.9	102			80 - 120	20	
Copper	BRL	0.0025	0.014	0.0125	NC	97.8	101	3.2	102			80 - 120	20	
Nickel	BRL	0.0005	0.005	0.0034	38.1	107	101	5.8	101			80 - 120	20	r
Zinc	BRL	0.0020	0.044	0.0420	4.70	105	98.7	6.2	102			80 - 120	20	

Comment:

Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.

r = This parameter is outside laboratory RPD specified recovery limits.

Environmental Laboratories, Inc.
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QA/QC Report

October 12, 2020

QA/QC Data

SDG I.D.: GCG90796

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 548179 (umhos/cm), QC Sample No: CG90398 (CG90796, CG90797, CG90799)													
Conductivity	BRL	5	674	667	1.00	99.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548406 (mg/L), QC Sample No: CG90399 (CG90796, CG90797, CG90799)													
Total Organic Carbon	BRL	1.0	3.0	3.1	NC	92.0			100			85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548315 (mg/L), QC Sample No: CG90399 (CG90796)													
Total Solids	BRL	10	78	79	1.30	98.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548279 (mg/L), QC Sample No: CG90739 (CG90796)													
Tot. Diss. Solids	BRL	10	280	280	0	99.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548240 (mg/L), QC Sample No: CG90797 (CG90796, CG90797, CG90799)													
Alkalinity-CaCO3	BRL	5.00	59.3	59.4	0.20	98.4						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548238 (pH), QC Sample No: CG90797 (CG90797, CG90798, CG90799)													
pH			7.29	7.30	0.10	98.7						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 548814 (mg/L), QC Sample No: CG90745 (CG90796, CG90797, CG90799)													
Ammonia as Nitrogen	BRL	0.05	<0.05	<0.05	NC	94.4			94.5			90 - 110	20
QA/QC Batch 548216 (mg/L), QC Sample No: CG90977 (CG90798)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	97.0							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 12, 2020

Monday, October 12, 2020

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCG90796 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

October 12, 2020 SDG I.D.: GCG90796

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Chronic Sample Set #1

Cooler: Yes [X] No [ ]
Coolant: IPK [X] ICE [ ] No [ ]

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Temp 1.1 °C Pg of

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
[ ] Fax:
[ ] Phone:
[X] Email: Kimberly.wills@nebio.com

Customer: NEB
Address: 77 Batson Drive, Manchester, CT 06042

Project: Patriot Beverages
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O: 22823

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Hardness, alkalinity	Specific conductance	Total solids	Diss dissolved solids	Ammonia	TOC	Cd(AA)/Pb(AA)/Cu,Ni,Zn,Al	total residual chlorine	pH	MS/MSD *	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCL	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml [ ] 1000ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
90796	Eff #1 C40-3875	WW	10/4-10/5 2020	0700-0700	X	X	X	X	X	X	X				1					1	1	1				
90797	Reedy Meadow Brook #1	D	10/5/20	0630	X	X			X	X	X		X		1					1	1	1				
90798	Eff grab #1 C40-3876	WW	10/5/20	0700								X	X							1						
90799	SRCE lab water C40-3872	D			X	X			X	X	X		X		1					1	1	1				

Relinquished by:	Accepted by:	Date:	Time:
Kayleen Fraser		10-5	1540
		10-5	1602

Comments, Special Requirements or Regulations:
Cd - 0.0005 mg/L Cu - 0.003 mg/L
Pb - 0.0005 mg/L Al - 0.02 mg/L
Zn - 0.005 mg/L Ni - 0.005 mg/L

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

Turnaround Time:
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[X] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] (Residential) Direct Exposure
[ ] (Comm/Industrial) Direct Exposure
[ ] GA Leachability
[ ] GB Leachability
[ ] GA-GW Objectives
[ ] GB-GW Objectives

CT
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1 [ ] MWRA eSMART
[ ] GW-2 [ ] S-1 10% CALC
[ ] GW-3
[ ] S-1 GW-1 [ ] S-1 GW-2 [ ] S-1 GW-3
[ ] S-2 GW-1 [ ] S-2 GW-2 [ ] S-2 GW-3
[ ] S-3 GW-1 [ ] S-3 GW-2 [ ] S-3 GW-3
[ ] SW Protection

State where samples were collected: MA

Data Format
[ ] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

PEL-126 REV. 06/20

PHOENIX
Environmental Laboratories, Inc.

Tuesday, October 13, 2020

Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGE
SDG ID: GCG92886
Sample ID#s: CG92886 - CG92888

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

October 13, 2020

SDG I.D.: GCG92886

Project ID: PATRIOT BEVERAGE

Client Id	Lab Id	Matrix
EFF #2 C40-3900	CG92886	WASTE WATER
REEDY MEADOW BROOK #2 C40-3901	CG92887	WATER
EFF GRAB #2	CG92888	WASTE WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 13, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/07/20	7:00
Location Code:	NEB	Received by:	B	10/07/20	17:46
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG92886
Phoenix ID: CG92886

Project ID: PATRIOT BEVERAGE
Client ID: EFF #2 C40-3900

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.07	0.05	mg/L	1	10/13/20	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director
October 13, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 13, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		10/07/20	6:00
Location Code:	NEB	Received by:	B	10/07/20	17:46
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG92886
Phoenix ID: CG92887

Project ID: PATRIOT BEVERAGE
Client ID: REEDY MEADOW BROOK #2 C40-3901

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.16	0.10	mg/L	2	10/13/20	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director
October 13, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 13, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/07/20	7:00
Location Code:	NEB	Received by:	B	10/07/20	17:46
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG92886
Phoenix ID: CG92888

Project ID: PATRIOT BEVERAGE
Client ID: EFF GRAB #2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.03	0.02	mg/L	1	10/07/20 20:27	MW	SM4500CLG-97
pH	8.55	1.00	pH Units	1	10/08/20 04:24	AP/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director
October 13, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 13, 2020

QA/QC Data

SDG I.D.: GCG92886

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 548664 (pH), QC Sample No: CG92889 (CG92888)													
pH			7.97	8.12	1.90	98.6						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 549124 (mg/L), QC Sample No: CG92643 (CG92886, CG92887)													
Ammonia as Nitrogen	BRL	0.05	0.54	0.55	1.80	95.1			99.3			90 - 110	20
QA/QC Batch 548551 (mg/L), QC Sample No: CG92625 (CG92888)													
Chlorine Residual	BRL	0.02	<0.02	0.02	NC	94.5							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 13, 2020

Tuesday, October 13, 2020

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCG92886 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

October 13, 2020 SDG I.D.: GCG92886

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Chronic Sample Set #2

Cooler: Yes ☑ No ☐
Coolant: IPK ☑ ICE ☐ No ☐

CHAIN OF CUSTODY RECORD

Temp 1.5 °C Pg of

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☒ Email: kimberly.wills@nebio.com

Customer: NEB
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O.: 22823

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request: Ammonia pH, IRC

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	MS/MSD*	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCL	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [4-250ml] [ ] 500ml [ ] 1000ml	PL H2SO4 [4-250ml] [ ] 500ml [ ] 1000ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
C40-3100 92886	Eff #2	WW	10/6-7/20	0700-0700	X							1					
C40-3101 92887	Reedy Meadow Brook #2	D	10/7/20	0600	X							1					
92888	Eff grab #2	WW	10/7/20	0700		X						1					

Relinquished by:	Accepted by:	Date:	Time:
		10-7-20	1715
		10-7-20	1746

Comments, Special Requirements or Regulations:

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ (Residential) Direct Exposure
☐ (Comm/Industrial) Direct Exposure
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1 ☐ MWRA eSMART
☐ GW-2 ☐ S-1 10% CALC
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ SW Protection

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

PEL-126 REV. 06/20

PHOENIX
Environmental Laboratories, Inc.

Wednesday, October 14, 2020

Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCG94479
Sample ID#s: CG94479 - CG94481

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

October 14, 2020

SDG I.D.: GCG94479

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFF #3 C40-3940	CG94479	WASTE WATER
REEDY MEADOW BROOK #3 C40-3941	CG94480	WATER
EFF GRAB #3	CG94481	WASTE WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 14, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/09/20	7:00
Location Code:	NEB	Received by:	B	10/09/20	14:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG94479
Phoenix ID: CG94479

Project ID: PATRIOT BEVERAGES
Client ID: EFF #3 C40-3940

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	10/14/20	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 14, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 14, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		10/09/20	7:30
Location Code:	NEB	Received by:	B	10/09/20	14:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG94479
Phoenix ID: CG94480

Project ID: PATRIOT BEVERAGES
Client ID: REEDY MEADOW BROOK #3 C40-3941

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.10	0.10	mg/L	2	10/14/20	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 14, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 14, 2020

FOR: Attn: Ms. Kim Wills
New England Bioassay
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/09/20	7:00
Location Code:	NEB	Received by:	B	10/09/20	14:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22823				

Laboratory Data

SDG ID: GCG94479
Phoenix ID: CG94481

Project ID: PATRIOT BEVERAGES
Client ID: EFF GRAB #3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	< 0.02	0.02	mg/L	1	10/09/20 16:31	MW	SM4500CLG-97
pH	8.40	1.00	pH Units	1	10/09/20 21:05	AP/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
October 14, 2020
Reviewed and Released by: Helen Geoghegan, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 14, 2020

QA/QC Data

SDG I.D.: GCG94479

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 548990 (pH), QC Sample No: CG94346 (CG94481)													
pH			6.89	6.82	1.00	98.8						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 549266 (mg/L), QC Sample No: CG94097 (CG94479, CG94480)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	91.3			99.0			90 - 110	20
QA/QC Batch 548917 (mg/L), QC Sample No: CG94348 (CG94481)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	98.2							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 14, 2020

Wednesday, October 14, 2020

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCG94479 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

October 14, 2020 SDG I.D.: GCG94479

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Chronic Sample Set #3

Cooler: Yes [X] No [ ]
Coolant: IPK [X] ICE [ ] No [ ]

CHAIN OF CUSTODY RECORD

Temp 2 °C Pg of

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
[ ] Fax:
[ ] Phone:
[X] Email: Kimberly.Wills@nebia.com

Customer: NEB
Address: 77 Batson Drive, Manchester, CT 06042

Project: Patriot Beverages
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O: 22823

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request: Ammonia, pH, TRC

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	MS/MSD *	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCL	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
C40-3440 94479	Eff #3	WW	10/8/20	0000-0000		X						1					
C40-3441 94480	Reedy Meadow Brook #3	O	10/9/20	0730		X						1					
94481	Eff grab #3	WW	10/9/20	0700	X						1						

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	10-9-20	1430
[signature]	[signature]	10-9-20	1452

Comments, Special Requirements or Regulations:

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

Turnaround Time:
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[X] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] (Residential) Direct Exposure
[ ] (Comm/Industrial) Direct Exposure
[ ] GA Leachability
[ ] GB Leachability
[ ] GA-GW Objectives
[ ] GB-GW Objectives

CT
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1 [ ] MWRA eSMART
[ ] GW-2 [ ] S-1 10% CALC
[ ] GW-3
[ ] S-1 GW-1 [ ] S-1 GW-2 [ ] S-1 GW-3
[ ] S-2 GW-1 [ ] S-2 GW-2 [ ] S-2 GW-3
[ ] S-3 GW-1 [ ] S-3 GW-2 [ ] S-3 GW-3
[ ] SW Protection

State where samples were collected: MA

Data Format
[ ] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

PEL-126 REV. 06/20

SAMPLE RECEIPT CHEMISTRY
&
CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set # 1

EFFLUENT

Sampler: Jim Dragoon
Title: Chief Op-Wastewater
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: OUTFALL 001
Start Date: 10/4/20 Time: 0700
End Date: 10/5/20 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 10/5/20
Time Collected: 0700

Sample Type:
_____ Prechlorinated
_____ Dechlorinated
X Unchlorinated
_____ Chlorinated

RECEIVING WATER

Sampler: Jim Dragoon
Title: Chief Op-Wastewater
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 10/5/20
Time Collected: 0630

Due to COVID-19 safety precautions Samples were received in NEB refrigerator

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 10/5/20	Time: 9:28
Received By: Joseph Dagar	Date: 10/5/20	Time: 9:28
Relinquished By: Joseph Dagar	Date: 10/5/20	Time: 11:41
Received By: Krystal Rowe	Date: 10/5/20	Time: 11:11

Optional Information

Purchase Order # to reference on invoice: _____

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 6.4 °C
Effluent COC# C40-3875

Temperature of Receiving Water Upon Receipt at Lab: 3.6 °C
Receiving Water COC# C40-3876

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

EFFLUENT Sample Set #2

Sampler: Jim Dragon

Title: Chief of Wastewater

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: OUTFALL 001

Start Date: 10/6/20 Time: 0700

End Date: 10/7/20 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected:

Time Collected:

Sample Type:

- ____ Prechlorinated
- ____ Dechlorinated
- X Unchlorinated
- ____ Chlorinated

RECEIVING WATER

Sampler: Jim Dragon

Title: Chief of Wastewater

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 10/7/20

Time Collected: 0800

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Jim Dragon	Date: 10-7-2020	Time: 9:20
Received By:	Roger Dyer	Date: 10-7-2020	Time: 9:20
Relinquished By:	Roger Dyer	Date: 10-7-2020	Time: 11:05
Received By:	[signature]	Date: 10/7/20	Time: 1114

Optional Information

Purchase Order # to reference on invoice: 20901

Due to COVID-19 safety precautions Samples were received in NEB refrigerator

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 6.2 °C

Temperature of Receiving Water Upon Receipt at Lab: 4.0 °C

Effluent COC# C40-3900

Receiving Water COC# C40-3901

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set # 3

EFFLUENT

Sampler: Jim Drapeau
Title: Chief of Wastewater
Facility: Patriot Beverages

Sampling Method: X Composite
Sample ID: OUTFALL 001
Start Date: 10/8/20 Time: 0700
End Date: 10/9/20 Time: 0700

Sampling Method: X Grab (for pH and TRC only X)
Date Collected: 10/9/20
Time Collected: 0700

Sample Type:
- Prechlorinated
- Dechlorinated
- X Unchlorinated
- Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau
Title: Chief of Wastewater
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 10/9/20
Time Collected: 0730

Due to COVID-19 safety precautions Samples were received in NEB refrigerator

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	[signature]	Date: 10/9/20	Time: 9:20
Received By:	[signature]	Date: 10.09.2020	Time: 9:20
Relinquished By:	[signature]	Date: 10.09.2020	Time: 11:25
Received By:	[signature]	Date: 10-9-20	Time: 1130

Optional Information

Purchase Order # to reference on invoice: 20901

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 4.5 °C

Temperature of Receiving Water Upon Receipt at Lab: 2.5 °C

Effluent COC# C40-3940

Receiving Water COC# C40-3941

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 44697

DATE RECEIVED	10/5/20		10/7/20		10/9/20	
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3
COC #	C40-3875	C40-3876	C40-3900	C40-3901	C40-3940	C40-3941
pH (SU)	8.1	7.5	8.3	7.6	8.2	7.2
Temperature (^oC)	6.4	3.6	6.2	4.0	4.5	2.5
Dissolved Oxygen (mg/L)	9.6	6.9	9.8	6.5	10.0	7.8
Conductivity (µmhos)	1,844	605	2,045	661	2,026	677
Salinity (ppt)	<1	<1	1	<1	1	<1
TRC - DPD (mg/L)	0.012	0.314	0.017	0.237	0.017	0.629
TRC - Amperometric (mg/L)	N/A	<0.05	N/A	<0.05	N/A	<0.05
Hardness (mg/L as $CaCO_3$)	158	90	178	102	180	102
Alkalinity (mg/l as $CaCO_3$)	645	55	750	55	710	55
Tech Initials	KF	KF	KO/BT	KO/BT	PD	PD

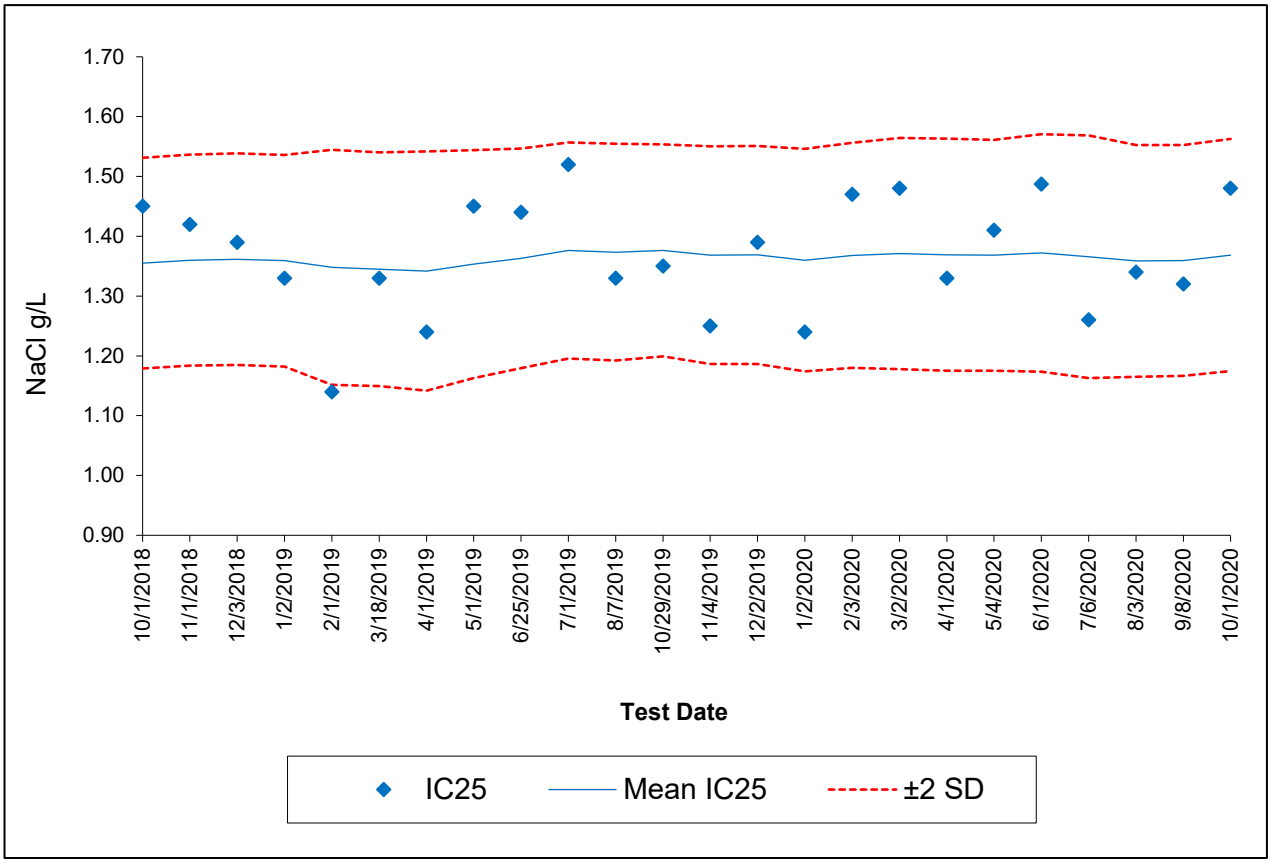
NOTE: NA = NOT APPLICABLE

Data Reviewed By: Kimberly Wills Date Reviewed: 10/29/20

REFERENCE TOXICANT CHARTS

New England Bioassay

Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC_{25}



Test ID	Date	IC_{25}	Mean IC_{25}	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1.36	0.09	1.18	1.54	0.07	8.91	11.06
19-178	2/1/2019	1.14	1.35	0.10	1.15	1.54	0.07	6.84	10.94
19-376	3/18/2019	1.33	1.35	0.10	1.15	1.54	0.07	15.36	10.73
19-404	4/1/2019	1.24	1.34	0.10	1.14	1.54	0.07	7.57	10.73
19-541	5/1/2019	1.45	1.35	0.10	1.16	1.54	0.07	7.92	10.62
19-823	6/25/2019	1.44	1.36	0.09	1.18	1.55	0.07	10.75	10.76
19-927	7/1/2019	1.52	1.38	0.09	1.20	1.56	0.07	14.21	10.91
19-1090	8/7/2019	1.33	1.37	0.09	1.19	1.55	0.07	12.60	10.97
19-1559	10/29/2019	1.35	1.38	0.09	1.20	1.55	0.06	9.92	10.81
19-1561	11/4/2019	1.25	1.37	0.09	1.19	1.55	0.07	12.54	10.90
19-1697	12/2/2019	1.39	1.37	0.09	1.19	1.55	0.07	7.62	10.83
20-3	1/2/2020	1.24	1.36	0.09	1.17	1.55	0.07	5.90	9.98
20-133	2/3/2020	1.47	1.37	0.09	1.18	1.56	0.07	8.59	10.09
20-292	3/2/2020	1.48	1.37	0.10	1.18	1.56	0.07	30.20	10.91
20-429	4/1/2020	1.33	1.37	0.10	1.18	1.56	0.07	9.16	10.91
20-588	5/4/2020	1.41	1.37	0.10	1.18	1.56	0.07	8.69	11.01
20-712	6/1/2020	1.49	1.37	0.10	1.17	1.57	0.07	11.25	10.99
20-933	7/6/2020	1.26	1.37	0.10	1.16	1.57	0.07	8.31	10.75
20-1072	8/3/2020	1.34	1.36	0.10	1.16	1.55	0.07	7.93	10.55
20-1287	9/8/2020	1.32	1.36	0.10	1.17	1.55	0.07	17.57	10.90
20-1417	10/1/2020	1.48	1.37	0.10	1.17	1.56	0.07	12.18	10.91

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45
PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%